POSTER

TCT-152

Restenosis Following Distal Left Main Percutaneous Coronary Intervention With A 2 Stent-technique: Incidence, Immediate And Long-term Outcomes

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Background: Distal left main coronary artery (LMCA) stenosis is a technical challenge for interventional cardiologists that can be approached by different strategies (1 vs. 2 stent). Despite observational studies reporting a better clinical outcome of 1 stent vs. 2 stent techniques, there are limited data regarding the incidence, management and outcomes of restenosis following distal LMCA treatment with 2 drug-eluting stents (DES).
Methods: Retrospective cohort analysis of consecutive patients undergoing PCI with DES implantation for distal LMCA between April 2002 and December 2008. The aim of this study was to identify the incidence of restenosis following distal LMCA treated with 2 DES and evaluate the immediate and long-term outcomes.
Results: We identified 234 patients who underwent PCI with DES for distal LMCA stenosis. Of these, 140 (59%) were treated with a 2-stent technique: 63 (45%) Crush, 41 (29%) Culotte, 17 (12%) T-stenting. The mean age was 65±10.3 years, 119 (85%) were male and 35 (25%) were diabetics. Final kissing balloon inflation was performed in 113 (81%) patients. Angiographic follow-up was obtained in 102 pts (73%). In-stent restenosis (ISR) was found in 20/102 patients (20%). Of these 12/20 (60%) were focal and 8/20 (40%) were diffuse. The ISR site was: SB in 8 (40%), MB in 5 (25%), both branches in 7 (35%). Focal ISR was treated with POBA in 7/12 cases (58%) and with DES implantation in 5/12 (42%) cases. Of the 8 diffuse ISR, 5 (62%) underwent CABG while 3 (38%) were treated with re-PCI. No peri-procedural death, MI or ST were reported during restenosis treatment with PCI. At a median follow up of 2.4 years (IQR 1-5.7) 5 patients (20%) in the ISR cohort died (3 cardiac deaths). No MI, TLR or definite/probable ST were reported in the ISR cohort. However, in the overall cohort, 2 (1.4%) patients suffered a definite/probable ST, of whom 1 died and 1 survived the event following emergent PCI.
Conclusions: The incidence of ISR following 2-DES implantation for distal LMCA is acceptable and can be managed in most of cases with re-PCI that is associated with favorable immediate and long term outcomes.

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Long-term Outcomes of Sirolimus-Eluting Stents versus Paclitaxel-Eluting Stents in Unprotected Left Main Coronary Artery Bifurcation Lesions

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Background: The treatment of unprotected left main coronary artery (uLMCA) bifurcation lesions remains challenging. We compared the safety and efficacy of sirolimus-eluting stent (SES) and paclitaxel-eluting stent (PES) implantation for the treatment of uLMCA bifurcation lesions.
Methods: One hundred fifteen patients who underwent stent implantation using a provisional T-stenting technique with SES or PES for uLMCA bifurcation lesions were enrolled. A major adverse cardiac event (MACE) was defined as a composite of cardiac death, myocardial infarction or target lesion revascularization.
Results: Ninety-four patients were treated with SES and 21 patients with PES. Baseline characteristics were similar between the two groups. Angiographic follow-up was performed in 99 (86%) patients. Late loss in the LMCA to the left anterior descending coronary artery was significantly lower in the SES group than in the PES group (0.28±0.54 mm versus 1.03±0.45 mm, p<0.001). One case of stent thrombosis occurred in the SES group. During follow-up with a median of 712 days, the SES group had a lower MACE compared with the PES group (10.6% versus 28.6%, p=0.032). Cox proportional hazards models including age, sex, diabetes, acute coronary syndrome, true bifurcation, stenting strategy, and type of drug-eluting stent used (SES versus PES) demonstrated that stent type was the only predictor of MACE (HR of PES versus SES 3.88, 95% CI 1.29 - 11.67, p=0.016).

Clinical outcomes in the two patient groups

	All patients (n = 115)	SES (n = 94)	PES (n = 21)	p Value
Cardiac death, n (%)	3 (3%)	2 (2%)	1 (5%)	0.50
MI, n (%)	2 (2%)	1 (1%)	1 (5%)	0.20
TLR, total, n (%)	11 (10%)	7 (7%)	4 (19%)	0.11
TLR in the LMCA to LAD, n (%)	2 (2%)	1 (1%)	1 (5%)	0.33
TLR in the LCX, n (%)	9 (8%)	6 (6%)	3 (14%)	0.36
Major adverse cardiac events, n (%)	16 (14%)	10 (11%)	6 (29%)	0.032
Stent thrombosis, n (%)	1 (1%)	1 (1%)	0 (0%)	>0.99
SES, sirolimus-eluting stent; PES, paclitaxel-eluting stent				

Conclusions: According to the results of the present study, SES implantation appears to yield better long-term outcomes than PES for the treatment of uLMCA bifurcation lesions.

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Prognostic Impact of Total Chronic Occlusion of The Right Coronary Artery in Patients Treated with Drug-Eluting stent for Unprotected Left Main Disease

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Background: Data from registries have shown a spread increase in drug-eluting stent implantation (DES) for unprotected left main disease (ULMD). No data exist about the clinical impact of total chronic occlusion of the right coronary artery (RCA-CTO) in patients treated with DES for ULMD.
Methods: Data collected in the Florence Registry from 2005 to 2009 including all patients admitted to Florence hospital with ULMD undergoing DES implantation. Only patients with ST-T elevation acute myocardial infarction were excluded from the analysis. There were no angiographic exclusion criteria. Primary end point was cardiac mortality at long term follow-up. Survival curves were generated using the Kaplan-Meier method, and the difference between groups was assessed by log rank test.
Results: From 2005 to 2009, n= 330 patients with ULMD underwent DES implantation. Out of these n=78 (24%) had RCA-CTO. Patients with RCA-CTO compared to patients without RCA-CTO had a higher Euroscore (20 ± 22 vs 13 ± 17; p =.003, Euroscore ≥ 6: 68% vs 51%; p=.009) and a lower left ventricular ejection fraction (39 ± 14% vs 47 ± 12%; p <.001). There were no other clinical, angiographic or procedural differences between patients with RCA-CTO and patients without RCA-CTO (mean age 71 ± 11 vs 72 ± 9, diabetes 35% vs 28%, previous myocardial infarction 31% vs 23%, admission for acute coronary syndrome 80% vs 69%, distal left main location 92% vs 84%, multiple stent implantation 32% vs 38%). Patients without RCA-CTO compared to the other group underwent a significantly higher completeness of coronary artery revascularization (89% vs 44%, p <.001). There were 3 procedural deaths (0.9%), 2 of these in patients with RCA-CTO. Mean clinical F-U for the entire cohort of patients was 678 ± 559 days. By Kaplan-Meier estimation long-term cardiac mortality was significantly higher in patients with angiographic evidence of RCA-CTO compared to patients without RCA-CTO: 76 ± 7 % vs 89 ± 3%, p =.003.
Conclusion: Patients with ULMD treated with DES and RCA-CTO had a long-term cardiac mortality compared to patients without RCA-CTO.

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Clinical Benefit of Use of Kissing Balloon Inflation and Non-Compliant Balloon in the Crush Technique for Bifurcation Coronary Lesions

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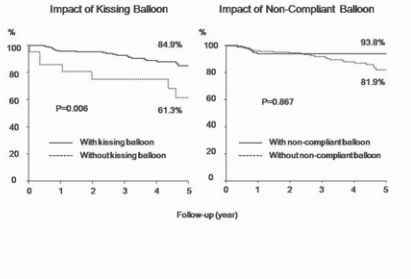
Background: Although the final kissing balloon inflation is recommended as a mandatory step in the Crush technique with drug-eluting stent (DES) for bifurcation coronary lesions, its benefit using non-compliant balloon has still not been determined well.
Methods: A total of 384 patients who underwent DES implantation with the Crush technique for bifurcation coronary lesions were enrolled. Patients who were treated with primary stenting for acute myocardial infarction or were followed for less than 6 months were excluded. In all patients, major adverse cardiac events (MACE) comprising all-cause deaths, spontaneous myocardial infarction, and target lesion revascularization (TLR) were evaluated.
Results: Final kissing balloon inflation was successfully performed in 363 (94.5%) lesions and non-compliant balloon in 177 (46.1%) lesions. For the follow-up period (median 23.6 months; interquartile range 12.3, 52.5), the MACE-free survival was lower in patients with kissing than those without kissing, but was not different between patients using non-compliant versus compliant balloons (Figure). In multivariate Cox models, a failure of final kissing inflation was significantly associated with long-term MACE (hazard ratio 3.00; 95% confidence interval 1.29, 6.97; p=0.010).



Conclusion: Final kissing balloon inflation in the Crush technique using DES reduces the risk of long-term MACE. But, clinical benefit of non-compliant balloon in improving clinical outcomes needs to be further estimated in large-scale studies.

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Coronary Bifurcation Lesions Treated with the Novel Polymer-Free Dedicated Bifurcation Paclitaxel-Eluting Stent (Nile Pax) - Procedural and 30-Day Results of the Prospective, Multicenter BIPAX Clinical Trial

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Background: The Nile PAX® dedicated drug-eluting stent (Minvasys SAS, France) is a novel technology designed for treatment of bifurcation lesions that incorporates the following components: 1. a cobalt-chromium alloy designed to optimize scaffold of the bifurcation carina with maintenance of side branch (SB) access without need for rewiring (Nile CroCo® platform, Minvasys SAS, France); 2. a non-polymeric coating (PAX) technology; and 3. a potent antiproliferative agent (paclitaxel).
Methods: From Dec/08 to Mar/09, a total of 102 pts with single bifurcation lesion were prospectively enrolled in this non-randomized, multicenter (9 sites in Europe/South America) study. Lesion criteria were vessel size 2.5-3.5mm in the parent vessel (PV) and 2.0-3.0mm in the SB, and lesion length <14mm in the PV. Clinical follow-up was scheduled at 1, 3, 6, 9 and 12 months, and yearly up to 5 years. Angiographic follow-up was scheduled at 8 months. We report the procedural and 30-day outcomes.